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EXAMINER	
DAGLAWI, AMAR A	

ART UNIT	PAPER NUMBER
2618	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/812,779	PARK, WOO-SEOG	
	Examiner	Art Unit	
	Amar Daglawi	2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12/12/2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

Claims 1-34 are pending. Claims 1, 3, 4, 10, 12, 13, 21, 25, 28, 29 and 34 are amended. Amendment has been entered.

Response to Arguments

1. Applicant's arguments with respect to claims 1-34 have been considered but are moot in view of the new ground(s) of rejection.

Claim Objections

2. Claim 25 is objected to because of the following informalities: The dependent claim 25 depends from an independent claim 25 with the same numbering. Appropriate correction is required.

3.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 1-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cho (US 6,934,565 B2) in view of Saiki et al (US 6,259,935 B1).

With respect to claim 1, Cho discloses a method for improving a sound quality of an MFD (Abstract) comprising:
amplifying an audio signal received from a base station (col.1, lines 39-67);
filtering an oscillation frequency component from the amplified audio signal (col. 1, lines 39-67) and
switching the amplified audio signal and the amplified audio signal with the oscillation frequency component removed to an MFD according to an operation mode of a terminal (Abstract, col.1, lines 40-67, col.2, lines 1-25, col.3, lines 24-35, col.4, lines 34-44).

However, Cho doesn't explicitly teach the filtering is performed by filtering unit comprising one or more high pass filters which is further taught in analogous art by Saiki (See, Fig.7, col.11, lines 15-67, col.12, lines 1-51).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teachings of Cho the audio amplifying unit with the high pass filter as taught by Saiki so as to cut the low frequency components and have only high frequency components being selected.

With respect to claim 2, Cho further teaches the audio signal is one of voice signal, a ring signal and an oscillation frequency signal (col.1, lines 55-67).

With respect to claim 3, Cho further teaches the amplified audio signal with the frequency component filtered is voice signal or a ring signal (col.1, lines 55-67).

With respect to claim 4, Cho discloses a method for improving a sound quality of an MFD (Abstract) comprising:
dividing an audio-signal into first-and second paths-according to a path control signal (col.3, lines35-62);
amplifying the signal on the second path (col.4, lines 34-44);
filtering the signal on the first path and the amplified signal on the second path (co1.3, lines 50-67, col.4, lines 1-34); and
selectively outputting the filtered signal and the amplified signal on the second path to an MFD according to a vibration enable signal (co1.3, lines 50-67, co1.4, lines 1-34).

However, Cho doesn't explicitly teach the filtering is performed by filtering unit comprising one or more high pass filters which is further taught in analogous art by Saiki (See, Fig.7, col.11, lines 15-67, col.12, lines 1-51).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teachings of Cho the audio amplifying unit with the high pass filter as taught by Saiki so as to cut the low frequency components and have only high frequency components being selected.

With respect to claim 5, Cho further teaches the audio signal is one of a voice signal, a ring signal and an oscillation frequency signal, and the filtered signal of the second path is a ring signal (col.3, lines 50-67, col.4, lines 1-34).

With respect to claim 6, Cho further teaches the signal on the first path is a voice signal and the signal on the second path is one of a ring signal and an oscillation frequency signal (co1.3, lines 50-67, co1.4, lines 1-34).

With respect to claim 7, Cho further teaches the audio signal is outputted to the first path in a call mode and outputted to the second path in a ring mode and a vibration mode (col.3, lines 50-67, col.4, lines 1-34).

With respect to claim 8, Cho further teaches the filtered signal is outputted to the MFD in the call mode and in the ring mode, while the amplified signal is outputted as it is to the MFD in the vibration mode (col.3, lines 44-67, co1.4, lines 11-34, co1.6, lines 48-67, col.7, lines 1-25).

With respect to claim 10, Cho an apparatus for improving a sound quality of an MFD (Abstract) comprising:
an audio amplifier for amplifying an audio signal received from a base station (col. 1, lines 39-67);
a filtering unit for filtering an output signal of the audio amplifier (co1.1, lines 39-67); and
a switching unit for selectively outputting at output signal of the filtering unit and the audio amplifier according to a vibration enable signal (Abstract, co1.1, lines

40-67, col.2, lines 1-25, col.3, lines 24-35, col.4, lines 34-44, col.3, lines 65-67, col.4, lines 1-15).

However, Cho doesn't explicitly teach the filtering is performed by filtering unit comprising one or more high pass filters which is further taught in analogous art by Saiki (See, Fig.7, col.11, lines 15-67, col.12, lines 1-51).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teachings of Cho the audio amplifying unit with the high pass filter as taught by Saiki so as to cut the low frequency components and have only high frequency components being selected.

With respect to claim 11, Cho further teaches the vibration enable signal is outputted from an processing unit (Mobile Station Modem) corresponding to an operation of a terminal, and has a low level in a call mode and in a ring mode and a high level in a vibration mode (Fig.3, col.6, lines 48-67, col7, lines 1-25)

With respect to claim 12, Cho further teaches an apparatus for improving a sound quality of an MFD (Abstract) comprising:

a first switching unit for selectively switching an audio signal received from

a base station to first or to second path according to a path control signal (col. 1, lines 40-67, Fig.3, co1.6, lines 13-67, co1.7, lines 1-5);

an audio amplifier for amplifying the audio signal of the second path (Fig.3, co1.6, lines 13-33, col.6, lines 1-6);

a filtering unit for filtering the audio signal of the first path and the output signal of the audio amplifier (co1.6, lines 7-28); and

a second switching unit for selectively switching an output signal of the filtering unit and the audio amplifier to an MFD according to a vibration enable signal (co1.6, lines 28-67, col.7, lines 15-25).

However, Cho doesn't explicitly teach the filtering is performed by filtering unit comprising one or more high pass filters which is further taught in analogous art by Saiki (See, Fig.7, col.11, lines 15-67, col.12, lines 1-51).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teachings of Cho the audio amplifying unit with the high pass filter as taught by Saiki so as to cut the low frequency components and have only high frequency components being selected.

With respect to claim 13, Cho further teaches the first and second switching units comprise of two analog audio switches, respectively, and the filtering unit comprises of two high pass filters (col.5, lines 60-67, co1.6, lines 1-6).

With respect to claim 14, Cho further teaches the path control signal and the vibration enable signal are outputted from a processing unit (Mobile Station Modem) corresponding to an operation mode of the terminal (col.6, lines 13-22).

With respect to claim 15, Cho further teaches the path control signal has a low level in the call mode and a high level in the ring mode and in the vibration

mode, while the vibration enable signal has a low level in the call mode and the ring mode and a high level in the vibration mode (col.3, lines 44-67, col.4, lines 1-13, col.6, lines 48-67, col.7, lines 1-25).

With respect to claim 16, Cho further teaches the audio signal is one of a voice signal, a ring signal and an oscillation frequency signal (co1.1, lines 55-67).

With respect to claim 17, Cho further teaches the signal of the first path is a voice signal, while the signal of the second path is one of a ring signal and an oscillation frequency signal (col.3, lines 50-67, col.4, lines 1-34).

With respect to claim 18, Cho further teaches the filtered output signal the audio amplifier is a ring signal (co1.6, lines 13-22).

With respect to claim 19, Cho further teaches the first switching unit outputs an audio signal to the first path in a call mode and outputs it to the second path in a ring mode and in a vibration mode (co1.3, lines 50-67, col.4, lines 1-34).

With respect to claim 20, Cho further teaches the second switching unit outputs an output signal of the filtering unit to the MFD in the call mode and in the ring mode, and outputs an output signal of the audio amplifier to the MFD in the vibration mode (col.3, lines 65-67, col.4, lines 1-14).

With respect to claim 21, Cho teaches a method of processing a communication signal (Abstract), the method comprising:

Determining if a received signal is at least one of a voice signal and an alert signal (Fig.3, co1.1, lines 40-67, col.2, lines 1-10);

Filtering the received signal to produce a first voice signal, if the received signal is a voice signal (Fig.3, co1.1, lines 40-67);

amplifying the received signal to generate a first amplified alert signal, if the received signal is an alert signal (col. 1, lines 40-67);

Determining if a vibration status is set (co1.2, lines 1-25);

Filtering the first amplified alert signal to generate a ring signal, if the vibration status is not set (Fig.3, co1.1, lines 40-67);

producing a vibration signal, if the vibration status is set (co1.2, lines 11-67); and

producing at least one of the voice signal, the ring signal, and the vibration signal as output (col.2, lines 15-39, co1.2, lines 11-67, co1.2, lines 1-10).

However, Cho doesn't explicitly teach the filtering is performed by filtering unit comprising one or more high pass filters which is further taught in analogous art by Saiki (See, Fig.7, col.11, lines 15-67, col.12, lines 1-51).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teachings of Cho the audio amplifying unit with the high pass filter as taught by Saiki so as to cut the low frequency components and have only high frequency components being selected.

With respect to claim 22, Cho further teaches providing the output signal to a multi-function device (MFD) (col.2, lines 50-58).

With respect to claim 23, Cho further teaches causing the MFD to vibrate, if the output signal comprises the vibration signal (co1.6, lines 48-67, col.7, lines 1-40);

causing the MFD to ring, if the output signal comprises a ring signal (col.6, lines 48-67, col.7, lines 1-40); and

causing the MFD to produce voice output, if the output signal comprises a voice signal (co1.6, lines 48-67, col.7, lines 1-40).

With respect to claim 24, Cho further teaches in filtering the voice signal and filtering the first amplified alert signal removes an oscillation frequency component from the first amplified alert signal (Fig.3, col.1, lines 40-67) [filtering removes the oscillation frequency component].

With respect to claim 25, Cho discloses a method of improving sound quality (Abstract) comprising:

amplifying the received signal to generate an amplified signal (Fig.3, co1.1, lines 40-67);

filtering the amplified signal to generate a filtered signal, if a vibration status is not set (Fig.3, col.4, lines 40-67); and

producing a vibration signal, if the vibration status is set and the amplified

signal does not contain voice components (co1.2, lines 11-67, co1.2, lines 15-39, col.2, lines 1-10).

However, Cho doesn't explicitly teach the filtering is performed by filtering unit comprising one or more high pass filters which is further taught in analogous art by Saiki (See, Fig.7, col.11, lines 15-67, col.12, lines 1-51).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teachings of Cho the audio amplifying unit with the high pass filter as taught by Saiki so as to cut the low frequency components and have only high frequency components being selected.

With respect to claim 26, Cho further teaches producing a voice signal if the amplified signal comprises voice components (co1.2, lines 1-10).

With respect to claim 27, Cho further teaches producing a ring signal if the amplified signal comprises ring components (col.2, lines 1-10).

With respect to claim 28, Cho teaches an apparatus for processing signals received by a mobile communication terminal comprising:

Means for determining if a received signal is a voice signal or alert signal (Fig.3, co1.1, lines 40-67, col.2, lines 1-10).

Means for filtering the received signal to produce a first voice signal, if the received signal is voice signal (Fig.3, co1.1, lines 40-67).

means for amplifying the received signal to generate a first amplified alert signal, if the received signal is an alert signal (Fig.3, col. 1, lines 40-67);

Means for determining if a vibration status is set (Fig.3, co1.2, lines 1-25);

Means for filtering the first amplified alert signal to generate a ring signal, if the vibration status is not set (Fig.3, colo3, lines 40-67);

Means for producing a vibration signal, if the vibration status is set (co1.2, lines 11-67);

and means for producing at least one of the voice signal, the ring signal, and the vibration signal as output (col.2, lines 15-39, col.1, lines 1-10, co1.2, lines 1-10, col.2, lines 11-67).

With respect to claim 29, An apparatus for processing a communication signal comprising:

a switch for switching a received signal to at least one of a voice signal and an alert signal (Fig.3, co1.1, lines 40-67);

an amplifier for amplifying the received signal to generate a first amplified s alert signal,

if the received signal is an alert signal (Fig.3, co1.1, lines 40-67).

a signal generating unit for generating a vibration enable signal (Fig.3, co1.2, lines 1-25);

a filter for filtering the received signal to produce a first voice-signal, if the received signal is a voice signal, and for filtering the first amplified alert signal to

generate a ring signal (Fig.3, co1.1, lines 40-67)

a switch for generating a vibration signal, if the vibration enable signal is set (Fig.3, 41A, 41 B, col.2, lines 11-67).

However, Cho doesn't explicitly teach the filtering is performed by filtering unit comprising one or more high pass filters which is further taught in analogous art by Saiki (See, Fig.7, col.11, lines 15-67, col.12, lines 1-51).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teachings of Cho the audio amplifying unit with the high pass filter as taught by Saiki so as to cut the low frequency components and have only high frequency components being selected.

With respect to claim 30, Cho further teaches a multi-function device (MFD), wherein the MFD vibrates if the vibration signal is generated (col.2, lines 1-10).

With respect to claim 31, Cho further teaches a multi-function device (MFD), wherein the MFD rings if the ring signal is generated (col.2, lines 1-10).

With respect to claim 32, Cho further teaches a multi-function device (MFD), wherein the MFD rings if the ring signal is generated (col.2, lines 1-10).

With respect to claim 33, Cho further teaches a multi-function device (MFD) utilized in a mobile communication terminal, wherein the MFD receives at least one of the vibration, ring, or voice signals (co1.2, lines 1-10).

With respect to claim 34, Cho discloses a mobile terminal having an MFD, the mobile terminal comprising:

a signal processor that outputs an analog signal and a control signal (Fig.3, co1.5, lines 55-67, col.6, lines 1-45);

a filter module in communication with the signal processor to output a filtered signal and an unfiltered signal (Fig.3, co1.6, lines 17-47); and

a switch in communication with the filter module and responsive to the control signal to output the filtered signal to the MFD when the control signal is at a first level, and to output the unfiltered signal when the control signal is at a second level (Fig.3, col.6, lines 47-67, col.7, lines 1-55).

However, Cho doesn't explicitly teach the filtering is performed by filtering unit comprising one or more high pass filters which is further taught in analogous art by Saiki (See, Fig.7, col.11, lines 15-67, col.12, lines 1-51).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teachings of Cho the audio amplifying unit with the high pass filter as taught by Saiki so as to cut the low frequency components and have only high frequency components being selected.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**.

See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amar Daglawi whose telephone number is 571-270-1221. The examiner can normally be reached on Monday- Friday (7:30 AM- 5:00 AM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lana N. Le can be reached on 571-272-7891. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Amar Daglawi

/Lana N. Le/
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